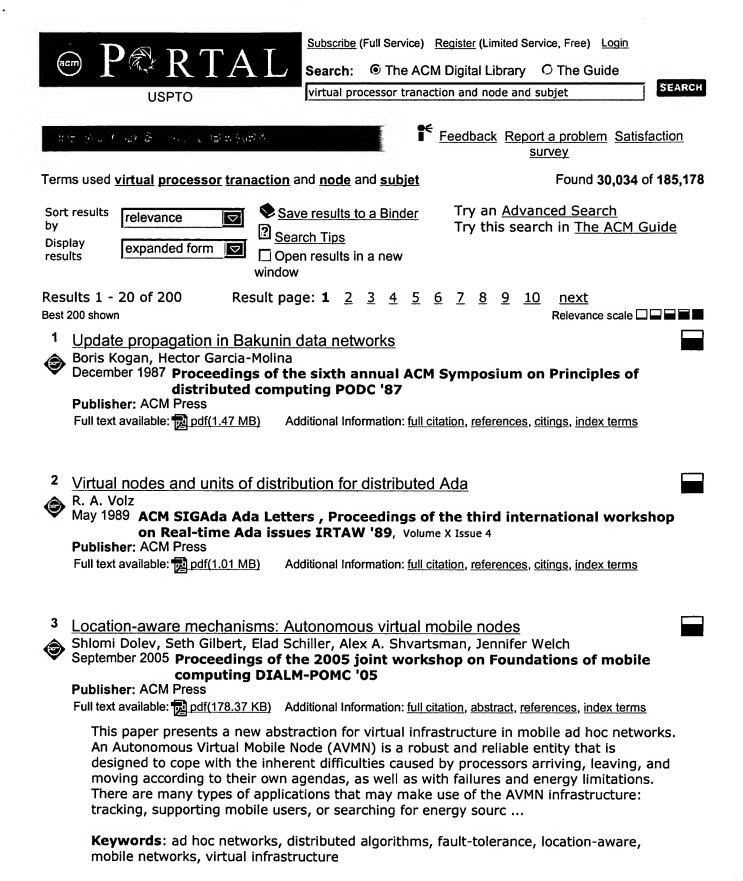
## **EAST Search History**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp		
<b>S1</b>	0	"707".clas. and virtual adj processor same node same map same subset	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/22 10:38		
S2	0	"707".clas. and virtual adj processor same node same map\$4 same subset	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/09/21 18:06		
S3	0	"709".clas. and virtual adj processor same node same map\$4 same subset	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/09/21 18:07		
<b>S4</b>	0	"703".clas. and virtual adj processor same node same map\$4 same subset	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/09/21 18:06		
S5	3	"703".clas. and virtual adj processor same node	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/09/21 18:06		
S6	19	19 "709".clas. and virtual adj processor same node		OR	ON	2006/09/21 18:09		
S7	0 S6 and map\$4 same subset		US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/09/21 18:08		
S8	2 S6 and map\$4 and subset		US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	PO;		2006/09/21 18:10		
S9	3	"710".clas. and virtual adj processor same node	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/09/21 18:09		

## **EAST Search History**

S10	16	"711".clas. and virtual adj processor same node	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/09/21 18:12
S11	5	S10 and map\$4 and subset	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/09/21 18:10
S12	2	"713".clas. and virtual adj processor same node	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/09/21 18:12



<u>Devirtualizable virtual machines enabling general</u>, single-node, online maintenance

David E. Lowell, Yasushi Saito, Eileen J. Samberg



October 2004 ACM SIGARCH Computer Architecture News, ACM SIGOPS Operating Systems Review , ACM SIGPLAN Notices , Proceedings of the 11th international conference on Architectural support for programming languages and operating systems ASPLOS-XI, Volume 32, 38, 39 Issue 5, 5, 11

Publisher: ACM Press

Full text available: pdf(174.01 KB)

Additional Information: full citation, abstract, references, citings, index terms

Maintenance is the dominant source of downtime at high availability sites. Unfortunately, the dominant mechanism for reducing this downtime, cluster rolling upgrade, has two shortcomings that have prevented its broad acceptance. First, cluster-style maintenance over many nodes is typically performed a few nodes at a time, mak-ing maintenance slow and often impractical. Second, cluster-style maintenance does not work on single-node systems, despite the fact that their unavailability during mainte ...

Keywords: availability, online maintenance, planned downtime, virtual machines

On virtual memories and micronetworks



G. Jack Lipovski

March 1977 ACM SIGARCH Computer Architecture News, Proceedings of the 4th annual symposium on Computer architecture ISCA '77, Volume 5 Issue 7 Publisher: ACM Press

Full text available: pdf(891.29 KB) Additional Information: full citation, abstract, references, index terms

We propose to use the microcomputer in a network to share I/O resources such as printers and archival memories. A model of a network is developed where computers correspond to edges of a graph. This model reflects the desired characteristics of the microcomputer organization. The advantage of virtual memory in these microcomputers is discussed. Herein, pages in the virtual memory are packets in the network. Packets and requests for packets are generated by page faults and packets are stored ...

6 Cellular Disco: resource management using virtual clusters on shared-memory



<u>multiprocessors</u>

Kinshuk Govil, Dan Teodosiu, Yongqiang Huang, Mendel Rosenblum

December 1999 ACM SIGOPS Operating Systems Review, Proceedings of the seventeenth ACM symposium on Operating systems principles SOSP **'99**, Volume 33 Issue 5

**Publisher: ACM Press** 

Additional Information: full citation, abstract, references, citings, index Full text available: pdf(1.93 MB) terms

Despite the fact that large-scale shared-memory multiprocessors have been commercially available for several years, system software that fully utilizes all their features is still not available, mostly due to the complexity and cost of making the required changes to the operating system. A recently proposed approach, called Disco, substantially reduces this development cost by using a virtual machine monitor that leverages the existing operating system technology. In this paper we present a syste ...

Accelerating shared virtual memory via general-purpose network interface support



Angelos Bilas, Dongming Jiang, Jaswinder Pal Singh

February 2001 ACM Transactions on Computer Systems (TOCS), Volume 19 Issue 1

**Publisher: ACM Press** 

Additional Information: full citation, abstract, references, index terms, Full text available: pdf(178.88 KB)

Clusters of symmetric multiprocessors (SMPs) are important platforms for highperformance computing. With the success of hardware cache-coherent distributed shared memory (DSM), a lot of effort has also been made to support the coherent sharedaddress-space programming model in software on clusters. Much research has been done in fast communication on clusters and in protocols for supporting software shared memory across them. However, the performance of software virtual memory (SVM) is sti ...

Keywords: applications, clusters, shared virtual memory, system area networks

8 The higher radix hypercube as an interconnection and virtual network



T.-C. Lin, P. Gupta

February 1989 Proceedings of the 17th conference on ACM Annual Computer Science Conference

**Publisher: ACM Press** 

Full text available: pdf(764.16 KB) Additional Information: full citation, abstract, references, index terms

The HIGHER RADIX HYPERCUBE (HRH) is investigated in this paper as an interconnection network for multiprocessors as well as a virtual network. The HRH is based on a radix higher than two, the radix for the hypercube. We have compared several topological parameters' for the HRH with the hypercube. It can be seen that HRH provides smaller diameter for a small price. A mapping and a partitioning algorithms are proposed for mapping different topologies to the HRH. In our algorithm, we first map ...

9 Cellular disco: resource management using virtual clusters on shared-memory



multiprocessors

Kinshuk Govil, Dan Teodosiu, Yonggiang Huang, Mendel Rosenblum August 2000 ACM Transactions on Computer Systems (TOCS), Volume 18 Issue 3

Publisher: ACM Press

Full text available: pdf(287.05 KB)

Additional Information: full citation, abstract, references, citings, index terms, review

Despite the fact that large-scale shared-memory multiprocessors have been commercially available for several years, system software that fully utilizes all their features is still not available, mostly due to the complexity and cost of making the required changes to the operating system. A recently proposed approach, called Disco, substantially reduces this development cost by using a virtual machine monitor that laverages the existing operating system technology. In this paper we present a ...

Keywords: fault containment, resource managment, scalable multiprocessors, virtual machines

10 A comparative analysis of virtual versus physical process-migration strategies for distributed modeling and simulation of mobile computing networks



Kwun Han, Sumit Ghosh

August 1998 Wireless Networks, Volume 4 Issue 5

Publisher: Kluwer Academic Publishers

Full text available: pdf(252.81 KB) Additional Information: full citation, abstract, references, index terms

Improvements in processor power and diminishing processor costs coupled with the potential of asynchronous, distributed algorithms promise to expand the frontier of mobile computing networks. In general, a mobile computing network consists of semiautonomous or autonomous stationary and mobile agents that perform local computations, cooperate, and communicate among themselves to achieve a desired objective. While the stationary entities are connected through a static interconnection network ...

11 The Wisconsin Wind Tunnel: virtual prototyping of parallel computers



Steven K. Reinhardt, Mark D. Hill, James R. Larus, Alvin R. Lebeck, James C. Lewis, David A. Wood

June 1993 ACM SIGMETRICS Performance Evaluation Review, Proceedings of the 1993 ACM SIGMETRICS conference on Measurement and modeling of computer systems SIGMETRICS '93, Volume 21 Issue 1

Publisher: ACM Press

Full text available: pdf(1.40 MB)

Additional Information: full citation, abstract, references, citings, index terms

We have developed a new technique for evaluating cache coherent, shared-memory computers. The Wisconsin Wind Tunnel (WWT) runs a parallel shared-memory program on a parallel computer (CM-5) and uses execution-driven, distributed, discrete-event simulation to accurately calculate program execution time. WWT is a virtual prototype that exploits similarities between the system under design (the target) and an existing evaluation platform (the host). The host directly executes all target program ins ...

12 <u>Using network interface</u> support to avoid asynchronous protocol processing in shared





virtual memory systems

Angelos Bilas, Cheng Liao, Jaswinder Pal Singh

May 1999 ACM SIGARCH Computer Architecture News, Proceedings of the 26th annual international symposium on Computer architecture ISCA '99, Volume 27 Issue 2

Publisher: IEEE Computer Society, ACM Press

Full text available: pdf(440.73 KB) Additional Information: full citation, abstract, references, citings, index Publisher Site terms

The performance of page-based software shared virtual memory (SVM) is still far from that achieved on hardware-coherent distributed shared memory (DSM) systems. The interrupt cost for asynchronous protocol processing has been found to be a key source of performance loss and complexity. This paper shows that by providing simple and general support for asynchronous message handling in a commodity network interface (NI), and by altering SVM protocols appropriately, protocol activity can be decoupled ...

13 Memory coherence in shared virtual memory systems



Kai Li, Paul Hudak

November 1986 Proceedings of the fifth annual ACM symposium on Principles of distributed computing PODC '86

Publisher: ACM Press

Full text available: pdf(773.45 KB) Additional Information: full citation, references, citings, index terms

14 A generalized processor sharing approach to flow control in integrated services networks: the single-node case

Abhay K. Parekh, Robert G. Gallager

June 1993 IEEE/ACM Transactions on Networking (TON), Volume 1 Issue 3

Publisher: IEEE Press

Full text available: pdf(1.61 MB)

Additional Information: full citation, references, citings, index terms, review

15 SoftFLASH: analyzing the performance of clustered distributed virtual shared



Andrew Erlichson, Neal Nuckolls, Greg Chesson, John Hennessy

September 1996 ACM SIGPLAN Notices, ACM SIGOPS Operating Systems Review, Proceedings of the seventh international conference on Architectural support for programming languages and operating systems ASPLOS-

**VII**, Volume 31, 30 Issue 9, 5

**Publisher: ACM Press** 

Additional Information: full citation, abstract, references, citings, index Full text available: pdf(1.29 MB) terms

One potentially attractive way to build large-scale shared-memory machines is to use small-scale to medium-scale shared-memory machines as clusters that are interconnected with an off-the-shelf network. To create a shared-memory programming environment across the clusters, it is possible to use a virtual shared-memory software layer. Because of the low latency and high bandwidth of the interconnect available within each cluster, there are clear advantages in making the clusters as large as possi ...

16 High performance communications in processor networks

C. R. Jesshope, P. R. Miller, J. T. Yantchev

April 1989 ACM SIGARCH Computer Architecture News, Proceedings of the 16th annual international symposium on Computer architecture ISCA '89, Volume 17 Issue 3

Publisher: ACM Press

Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index</u> Full text available: pdf(1.11 MB) terms

In order to provide an arbitrary and fully dynamic connectivity in a network of processors, transport mechanisms must be implemented, which provide the propagation of data from processor to processor, based on addresses contained within a packet of data. Such data transport mechanisms must satisfy a number of requirements - deadlock and livelock freedom, good hot-spot performance, high throughput and low latency. This paper proposes a solution to these problems, which allows deadlock free, ...

17 Helper threads via virtual multithreading on an experimental itanium<sup>®</sup> 2 processor-

based platform

Perry H. Wang, Jamison D. Collins, Hong Wang, Dongkeun Kim, Bill Greene, Kai-Ming Chan, Aamir B. Yunus, Terry Sych, Stephen F. Moore, John P. Shen

October 2004 ACM SIGPLAN Notices , ACM SIGOPS Operating Systems Review , ACM SIGARCH Computer Architecture News, Proceedings of the 11th international conference on Architectural support for programming languages and operating systems ASPLOS-XI, Volume 39, 38, 32 Issue 11, 5, 5

Publisher: ACM Press

Additional Information: full citation, abstract, references, citings, index 

Helper threading is a technology to accelerate a program by exploiting a processor's multithreading capability to run ``assist" threads. Previous experiments on hyperthreaded processors have demonstrated significant speedups by using helper threads to prefetch hard-to-predict delinquent data accesses. In order to apply this technique to processors that do not have built-in hardware support for multithreading, we introduce virtual multithreading (VMT), a novel form of switch-on-event user-level ...

**Keywords**: DB2 database, PAL, cache miss prefetching, helper thread, itanium processor, multithreading, switch-on-event

18 Bandwidth scheduling for wide-area ATM networks using virtual finishing times Anthony Hung, George Kesidis

February 1996 IEEE/ACM Transactions on Networking (TON), Volume 4 Issue 1

Publisher: IEEE Press

Full text available: 1 pdf(777.18 KB) Additional Information: full citation, references, citings, index terms

19 Memory coherence in shared virtual memory systems



Kai Li, Paul Hudak

November 1989 ACM Transactions on Computer Systems (TOCS), Volume 7 Issue 4

Publisher: ACM Press

Full text available: pdf(2.71 MB)

Additional Information: full citation, abstract, references, citings, index

terms, review

The memory coherence problem in designing and implementing a shared virtual memory on loosely coupled multiprocessors is studied in depth. Two classes of algorithms, centralized and distributed, for solving the problem are presented. A prototype shared virtual memory on an Apollo ring based on these algorithms has been implemented. Both theoretical and practical results show that the memory coherence problem can indeed be solved efficiently on a loosely coupled multiprocessor.

20 Virtual memory mapped network interface for the SHRIMP multicomputer



M. A. Blumrich, K. Li, R. Alpert, C. Dubnicki, E. W. Felten, J. Sandberg April 1994 ACM SIGARCH Computer Architecture News, Proceedings of the 21ST annual international symposium on Computer architecture ISCA '94, Volume

Publisher: IEEE Computer Society Press, ACM Press

Full text available: pdf(1.25 MB)

Additional Information: full citation, abstract, references, citings, index

The network interfaces of existing multicomputers require a significant amount of software overhead to provide protection and to implement message passing protocols. This paper describes the design of a low-latency, high-bandwidth, virtual memorymapped network interface for the SHRIMP multicomputer project at Princeton University. Without sacrificing protection, the network interface achieves low latency by using virtual memory mapping and write-latency hiding techniques, and obtains high bandw ...

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Macdonald, R.; Shoja, G.;

Communications, Computers and Signal Processing, 1993., IEEE Pacific Rim Volume 1, 19-21 May 1993 Page(s):272 - 275 vol.1

Digital Object Identifier 10.1109/PACRIM.1993.407171

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6. Three-dimensional finite-difference bidomain modeling of homogeneous on a data-parallel computer

Saleheen, H.I.; Claessen, P.D.; Ng, K.T.; <u>Biomedical Engineering, IEEE Transactions on</u> Volume 44, Issue 2, Feb. 1997 Page(s):200 - 204 Digital Object Identifier 10.1109/10.552249

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